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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/027,873	12/21/2001	Richard L. Knipe	TI-26153	1022
23494	7590	06/30/2004	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265				CHOI, WILLIAM C
		ART UNIT		PAPER NUMBER
		2873		

DATE MAILED: 06/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/027,873	KNIPE, RICHARD L. <i>(Signature)</i>	
	Examiner	Art Unit	
	William C. Choi	2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

1) Responsive to communication(s) filed on 21 June 2004.  
 2a) This action is FINAL.                            2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

4) Claim(s) 1-6,8-10,12-15 and 17-31 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) 1-6,8-10,12,13 and 19-31 is/are allowed.  
 6) Claim(s) 14,15 and 17 is/are rejected.  
 7) Claim(s) 18 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 04 August 2003 & 21 December 2001 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____.
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

In regard to claim 14, Gale et al discloses a micromechanical device comprising: at least one deflectable member supported by a torsion hinge and spaced apart from a substrate (Figure 1a, "26"); at least two bias electrodes supported by said substrate, one on each side of an axis of said torsion hinge (Figure 1b, "28" and "30"); and a means (column 8, lines 48-59, Figure 16, "198" and "199") associated with each said at least one deflectable member for selectively connecting said deflectable member to a ground potential (abstract, lines 11-13 and column 1, lines 53-57), but does not specifically disclose wherein said means is connected to a ground potential during a period in which said bias electrodes provide a reset signal. Gale et al discloses, however, wherein said means provides a reset signal and teaches that the mirror is deflected by grounding the address electrodes and biasing the mirror (column 4, lines 42-43). Gale et al further teaches wherein the same deflection effect would occur if both address electrodes were biased and the mirror was grounded because the voltage differential, not the voltage polarity, determines the electrostatic force that is generated (column 4, lines 40-48).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made for the means of Gale et al to be connected to a ground potential during a period in which said bias electrodes provide a reset signal, since Gale et al discloses wherein said means provides a reset signal and teaches that the mirror is deflected by grounding the address electrodes and biasing the mirror and also wherein the same deflection effect would occur if both address electrodes were biased and the mirror was grounded because the voltage differential, not the voltage polarity, determines the electrostatic force that is generated.

Regarding claim 15, Gale et al discloses wherein said means for selectively connecting comprising a pass transistor (column 8, lines 35-53, Figure 16, "198" and "199").

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gale et al (U.S. 5,444,566) as applied to claim 14 above, and further in view of Gale et al (U.S. 5,285,407).

Regarding claim 17, Gale et al (U.S. 5,444,566) discloses as set forth above, but does not specifically disclose wherein said means for selectively connecting comprising: a pass transistor; and a capacitor connected to a gate terminal of said pass transistor. Gale et al (U.S. 5,444,566) does teach, however, the use of the memory cell of (U.S. 5,285,407) of the same inventorship, in his device (column 6, lines 58-63). Gale et al (U.S. 5,285,407) teaches wherein said means for selectively electrically connecting comprising: a pass transistor; and a capacitor connected to a gate terminal of said pass transistor (Figure 4). Therefore, it would have been obvious to one of ordinary skill in

the art at the time the invention was made for said means of Gale et al (U.S. 5,444,566) to comprise a pass transistor; and a capacitor connected to a gate terminal of said pass transistor since Gale et al teaches its specific use in his device.

***Allowable Subject Matter***

Claims 1-6, 8-10, 12, 13 and 19-31 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: The prior art fails to teach a combination of all the claimed features as presented in claims 19-24: a method of operating a micromechanical device as claimed, specifically comprising electrically floating a deflectable member such that a reset signal does not reposition the electrically floating deflectable member.

The prior art fails to teach a combination of all the claimed features as presented in claims 25-29: a method of operating an array of micromechanical elements as claimed, specifically comprising grounding a deflectable member of a first group of said micromechanical elements; allowing a deflectable member of a second group of said micromechanical elements to electrically float; and applying a reset signal to bias electrodes associated with said micromechanical elements in said first and said second groups.

The prior art fails to teach a combination of all the claimed features as presented in claims 1-6, 8-10, 12 and 13: a micromechanical device as claimed, specifically comprising: at least one bias electrode associated with each at least one member

operable to apply a reset pulse when said member is connected to a ground signal by said switch.

Claim 18 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art fails to teach a combination of all the claimed features as presented in claim 18: a micromechanical device as claimed specifically wherein said means for selectively connecting comprises: a second terminal of a capacitor connected to said ground potential.

#### ***Response to Amendment***

The amendment to the claims filed on 5/26/2004 does not comply with the requirements of 37 CFR 1.121(c) because in line 2, of claim 14, applicant changes original, “**at least one deflectable member**” to “**an array of independently deflectable members**”, without proper markings. Amendments to the claims filed on or after July 30, 2003 must comply with 37 CFR 1.121(c).

#### ***Response to Arguments***

Applicant's arguments filed 5/26/2004 have been fully considered but they are not persuasive. In regard to the arguments against claims 14, 15 and 17, applicant argues that “Gale teaches a reset signal applied to the mirror, and therefore cannot be held to show, teach or suggest both ‘at least two bias electrodes supported by said

substrate, one on each side of an axis of said torsion hinge' and 'a means associated with each said at least one deflectable member for selectively connecting said deflectable member to a ground potential during a period in which said bias electrodes provide a reset signal'" (Remarks, page 7, paragraph 6, lines 5-9).

However, Gale does teach wherein deflection in his invention occurs by biasing the mirror and grounding the electrodes (the present case being argued above) or by grounding the mirror and biasing both address electrodes (column 4, lines 40-48), which is being claimed. Therefore, the reference of Gale continues to read on the limitations of the claimed invention.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Choi whose telephone number is (571) 272-2324. The examiner can normally be reached on Monday-Friday from about 9:00 am to 6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y. Epps can be reached on (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

W. C.  
William Choi  
Patent Examiner  
Art Unit 2873  
June 25, 2004



Georgia Epps  
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